UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,149	07/03/2003	Takeshi Masuda	026390-00009	3313

4372 7590 09/22/2010

ARENT FOX LLP
1050 CONNECTICUT AVENUE, N.W.
SUITE 400
WASHINGTON, DC 20036

EXAMINER	
ZERVIGON, RUDY	

ART UNIT	PAPER NUMBER
1716	

NOTIFICATION DATE	DELIVERY MODE
09/22/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DCIPDocket@arentfox.com
IPMatters@arentfox.com
Patent_Mail@arentfox.com

Office Action Summary	Application No.	Applicant(s)	
	10/612,149	MASUDA ET AL.	
	Examiner	Art Unit	
	Rudy Zervigon	1716	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 August 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6,8-11 and 13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6,8-11 and 13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 April 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 20, 2010 has been entered.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 3, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Horiike; Yasuhiro et al. (US 6155200 A). Horiike teaches a film-forming apparatus (Figure 2; column 6; lines 33-64) comprising a gas-mixing chamber (volume above 16; Figure 2; column 6; lines 33-64 - Compare to Applicant's 24; Fig.3,4) for admixing a raw gas (9; Figure 2; column 3; lines 50-52 - "etching, and the diluent gas"; column 6; lines 54-61) and a reactive gas (9; Figure 2; column 3; lines 50-52 - "etching, and the diluent gas"; column 6; lines 54-61); a film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) connected to the gas-mixing chamber (volume above 16; Figure 2; column 6; lines 33-64 - Compare to Applicant's 24; Fig.3,4), a gas mixture supply port (volume lateral to 16; Figure 2 - Compare with Applicant's 24a; Figure 3,4) defined only by opposing surfaces of the gas-mixing (volume above 16; Figure 2; column 6; lines 33-64 - Compare to Applicant's 24; Fig.3,4) and film-

forming (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) chambers; a circular shower head (18; Figure 2; column 6; lines 33-64) disposed on the top face of the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) and having a plurality of gas-injection holes (19; Figure 2) defined therethrough, each gas-injection hole (19; Figure 2) directly opposing the gas-mixing chamber (volume above 16; Figure 2; column 6; lines 33-64 - Compare to Applicant's 24; Fig.3,4); a stage (2; Figure 2; column 6; lines 33-64) for placing thereon a substrate (W; Figure 2; column 6; lines 33-64) to be processed, the stage (2; Figure 2; column 6; lines 33-64) being disposed inside the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) and movable in an up and down (3; Figure 2; column 6; lines 33-64) manner; an exhaust port (14; Figure 2; column 6; lines 33-64) for discharging an exhaust gas (used "process gas") from inside the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) to outside of the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4), the exhaust port (14; Figure 2; column 6; lines 33-64) being formed though a wall surface of the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) in a position below the stage (2; Figure 2; column 6; lines 33-64) at a time of film formation, the exhaust gas (used "process gas") generated in a space defined by the shower head (18; Figure 2; column 6; lines 33-64) and an upper face of the stage (2; Figure 2; column 6; lines 33-64) is discharged out of the exhaust port (14; Figure 2; column 6; lines 33-64) through a clearance (clearance between 2/3 and 1; Figure 2) between a side wall of the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) and the stage (2; Figure 2; column 6; lines 33-64); and a gas mixture (column 3; lines 50-52 -

"etching, and the diluent gas"; column 6; lines 54-61) prepared in the gas-mixing chamber (volume above 16; Figure 2; column 6; lines 33-64 - Compare to Applicant's 24; Fig.3,4) being introduced into the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) through the shower head (18; Figure 2; column 6; lines 33-64), thereby forming a film on the substrate to be processed, wherein the gas mixture (column 3; lines 50-52 - "etching, and the diluent gas"; column 6; lines 54-61) supply port (outlet portion of 75a,b that interface at 7b; Figure 7) is in fluid communication with the gas-mixing chamber (volume above 16; Figure 2; column 6; lines 33-64 - Compare to Applicant's 24; Fig.3,4) and the shower head (18; Figure 2; column 6; lines 33-64) and is located on a radially extending line of the shower head (18; Figure 2; column 6; lines 33-64), and wherein the gas mixture (column 3; lines 50-52 - "etching, and the diluent gas"; column 6; lines 54-61) supply port (outlet portion of 75a,b that interface at 7b; Figure 7) is constructed and arranged such that the gas mixture (column 3; lines 50-52 - "etching, and the diluent gas"; column 6; lines 54-61) to be supplied from the gas-mixing chamber (volume above 16; Figure 2; column 6; lines 33-64 - Compare to Applicant's 24; Fig.3,4) flows in a direct contact with, and only from outside a circumferential outer perimeter of, the upper surface of the shower head (18; Figure 2; column 6; lines 33-64) and the gas-injection holes (19; Figure 2) toward a central portion along the upper surface of the shower head (18; Figure 2; column 6; lines 33-64), as claimed by claim 1. Applicant's claim requirements directed to film deposition are intended use claim requirements in the pending apparatus claims. Horiike notes that his apparatus is used for both etching and deposition (column 1; lines 10-17). Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205

USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

Horiike further teaches:

i. The film-forming apparatus (Figure 2; column 6; lines 33-64) as set forth in claim 1, wherein when the flow rate of the gas mixture (column 3; lines 50-52 - "etching, and the diluent gas"; column 6; lines 54-61) is large, the shower conductance is small and the gas mixture (column 3; lines 50-52 - "etching, and the diluent gas"; column 6; lines 54-61) is injected into the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) from the central portion of the shower head (18; Figure 2; column 6; lines 33-64) upon the formation of the film, wherein the shower head (18; Figure 2; column 6; lines 33-64) has a relatively large diameter, that the distance between the shower head (18; Figure 2; column 6; lines 33-64) and the substrate (W; Figure 2; column 6; lines 33-64) to be processed is increased or that the shower head (18; Figure 2; column 6; lines 33-64) having a the relatively large diameter is used and the distance between the shower head (18; Figure 2; column 6; lines 33-64) and the substrate (W; Figure 2; column 6; lines 33-64) to be processed is increased, to thus prevent the central gas injection of the gas mixture (column 3; lines 50-52 - "etching, and the diluent gas"; column 6; lines 54-61) and to make the manner of a gas injection of the gas mixture (column 3; lines 50-52 - "etching, and the diluent gas"; column 6; lines 54-61) uniform,

as claimed by claim 3. The entirety of Applicant's claim 3 is an intended use of the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

ii. The film-forming apparatus (Figure 2; column 6; lines 33-64) as set forth in claim 1, wherein when the flow rate of the gas mixture (column 3; lines 50-52 - "etching, and the diluent gas"; column 6; lines 54-61) is small, the shower conductance is large and the gas mixture (column 3; lines 50-52 - "etching, and the diluent gas"; column 6; lines 54-61) is injected into the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) from the shower head (18; Figure 2; column 6; lines 33-64) and into a region above the substrate (W; Figure 2; column 6; lines 33-64) to be processed from the periphery of the shower head (18; Figure 2; column 6; lines 33-64) upon the formation of the film, wherein the shower head (18; Figure 2; column 6; lines 33-64) has a relatively small diameter, that the distance between the shower head (18; Figure 2; column 6; lines 33-64) and the substrate (W; Figure 2; column 6; lines 33-64) to be processed is reduced or that the shower head (18; Figure 2; column 6; lines 33-64) having the relatively small diameter is used and the distance between the shower head (18;

Figure 2; column 6; lines 33-64) and the substrate (W; Figure 2; column 6; lines 33-64) to be processed is reduced, to thus prevent the peripheral gas injection of the gas mixture (column 3; lines 50-52 - "etching, and the diluent gas"; column 6; lines 54-61) and to make the manner of the gas injection of the gas mixture (column 3; lines 50-52 - "etching, and the diluent gas"; column 6; lines 54-61) uniform, as claimed by claim 4. The entirety of Applicant's claim 4 is an intended use of the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 5, 6, 8, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiike; Yasuhiro et al. (US 6155200 A). Horiike does not teach the relative dimensions of Horiike's showerhead (18; Figure 2; column 6; lines 33-64) diameter vs. Horiike's film forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) diameter as claimed by claims 5. Horiike does not teach the relative distance between Horiike's substrate

(W) and Horiike's showerhead (18; Figure 2; column 6; lines 33-64). Horiike further does not teach the operating parameters of pressure and gas flow in the range of the claimed inequalities – claim 6, and 8-10.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize Horiike's relative apparatus dimensions and Horiike's operating parameters.

Motivation to optimize Horiike's relative apparatus dimensions and Horiike's operating parameters is for improving plasma density, and subsequently processing uniformity, as taught by Horiike (column 1, line 66 – column 2, line 4). Further, it would be obvious to those of ordinary skill in the art to optimize the operation of the claimed invention (In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980); In re Hoeschele , 406 F.2d 1403, 160 USPQ 809 (CCPA 1969); Merck & Co. Inc . v. Biocraft Laboratories Inc. , 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied , 493 U.S. 975 (1989); In re Kulling , 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990), MPEP 2144.05). Further it is well established that changes in apparatus dimensions are within the level of ordinary skill in the art.(Gardner v. TEC Systems, Inc. , 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied , 469 U.S. 830, 225 USPQ 232 (1984); In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04)

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horiike; Yasuhiro et al. (US 6155200 A) in view of Reimer; Paul et al. (US 6817377 B1). Horiike is discussed above.

Horiike further teaches:

an exhaust port (14; Figure 2; column 6; lines 33-64) for discharging an exhaust gas (used "process gas") from inside the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) to outside of the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) is formed though a wall surface of the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) in a position below the stage (2; Figure 2; column 6; lines 33-64) at a time of film formation, the exhaust gas (used "process gas") generated in a space defined by the shower head (18; Figure 2; column 6; lines 33-64) and an upper face of the stage (2; Figure 2; column 6; lines 33-64) is discharged out of the exhaust port (14; Figure 2; column 6; lines 33-64) through a clearance (clearance between 2/3 and 1; Figure 2) between a side wall of the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) and the stage (2; Figure 2; column 6; lines 33-64); wherein a gas mixture (column 3; lines 50-52 - "etching, and the diluent gas"; column 6; lines 54-61) supply port (outlet portion of 75a,b that interface at 7b; Figure 7) is constructed and arranged such that the gas mixture (column 3; lines 50-52 - "etching, and the diluent gas"; column 6; lines 54-61) to be supplied from the gas-mixing chamber (volume above 16; Figure 2; column 6; lines 33-64 - Compare to Applicant's 24; Fig.3,4) flows in a direct contact with, and only from outside a circumferential outer perimeter of, the upper surface of the shower head (18; Figure 2; column 6; lines 33-64) and the gas injection holes (19; Figure 2) toward a central portion along the upper surface of the shower head (18; Figure 2; column 6; lines 33-64) - claim 13.

Horiike does not teach a film-forming apparatus (Figure 2; column 6; lines 33-64), which comprises a load-lock chamber for stocking wafers conveyed from a wafer cassette in the

atmospheric conditions; a film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4); a conveyer chamber positioned between the load-lock chamber and the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) - claim 13.

Reimer teaches semicondustor processing apparatus (Figure 1) including a load-lock chamber (25c) for stocking wafers conveyed from a wafer cassette in the atmospheric conditions; a film-forming chamber (25a); a conveyer chamber (25b) positioned between the load-lock chamber (25c) and the film-forming chamber (25a).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Reimer's load-lock chamber (25c) and conveyer chamber (25b) to Horiike's apparatus.

Motivation to add Reimer's load-lock chamber (25c) and conveyer chamber (25b) to Horiike's apparatus is for process automation as taught by Reimer (column 1; lines 10-13).

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horiike; Yasuhiro et al. (US 6155200 A) in view of Okase; Wataru (US 5,884,009 A). Horiike is discussed above. Horiike does not teach the film-forming apparatus (Figure 2; column 6; lines 33-64) as set forth in claim 1, wherein a gas ring is disposed at a periphery of the top face of the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) so that an inert gas, which is not directly involved in the film formation, can uniformly be introduced into the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) through the gas ring and along the inner surface of the side wall of the film-forming chamber (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4), as claimed by claim 11.

Okase is discussed in prior actions. Okase teaches the film-forming apparatus (Figure 7; column 15, lines 6-67) as set forth in claim 1, wherein a gas ring (76; Figure 7; column 14; lines 30-45) is disposed at a periphery of the top face of the film-forming chamber (volume within 7c+piece containing 45; Figure 7; column 15, lines 6-67) so that an inert gas (77; Figure 7; column 15, lines 6-67), which is not directly involved in the film formation, can uniformly be introduced into the film-forming chamber (volume within 7c+piece containing 45; Figure 7; column 15, lines 6-67) through the gas ring (76; Figure 7; column 14; lines 30-45) and along the inner surface of the side wall of the film-forming chamber (volume within 7c+piece containing 45; Figure 7; column 15, lines 6-67), as claimed by claim 11.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Okase's gas ring (76; Figure 7; column 14; lines 30-45) to Horiike's apparatus.

Motivation to add Okase's gas ring (76; Figure 7; column 14; lines 30-45) to Horiike's apparatus is for preventing Horiike's chamber wall (1; Figure 2; column 6; lines 33-64 - Compare to Applicant's 3; Fig.3,4) from chemical / physical deterioration as taught by Okase – "A purge gas is supplied into spaces between the first vessel and the second vessel to prevent the process gases from coming into contact with the first vessel made of a metal to prevent the corrosion of the first vessel. " (abstract).

Response to Arguments

8. Applicant's arguments filed August 20, 2010 have been fully considered but they are not persuasive.

9. Applicant states:

"

Apparently, the Office Action considers the area or volume above the electrode 16 within the shower head 18 as corresponding with the gas-mixing chamber of Claim 1 (and presumably Claim 13). As such, it appears as if the "openings" defined between the left and right ends of the electrode 16 and the left and rights side walls of the shower head 18 (when looking at Figure 2) are considered as defining gas mixture supply ports which are in fluid communication between the gas-mixing chamber (defined by the Office Action as the area above electrode 16 in the shower head 18) and the shower head 18. Moreover, such a definition would also appear to locate the gas mixture supply ports of Horiike as being located on a radially extending line of the shower head.

“

In response, the Examiner’s above action has added Applicant’s corresponding Figure 2 and 3 structure to the Examiner's cited equivalents. The Examiner is thus drawing the reader's consideration to the claimed structure and the pertinent drawing elements in both the prior art and Applicant’s. Applicant’s amended claim limitations “gas mixture supply port defined only by opposing surfaces of the gas-mixing and film-forming chambers” describes a *region* 24a, Figure 2,3 “defined only by opposing surfaces of the gas-mixing and film-forming chambers”. The Examiner likewise illustrates that Horiike also has a defined *region* confined within Horiike’s gas-mixing (volume above 16; Figure 2; column 6; lines 33-64 - Compare to Applicant’s 24; Fig.3,4) and film-forming (1; Figure 2; column 6; lines 33-64 - Compare to Applicant’s 3; Fig.3,4) chambers.

Applicant states:

“

Further, if the gas mixture supply port is considered as the "opening" defined between the left and right ends of the electrode 16 and the left and right side walls of the shower head 18, then the gas mixture supply ports of Horiike would appear to be so constructed and arranged that *the gas mixture from the gas-mixing chamber would flow in direct contact with, and only from outside the circumferential outer perimeter of, the upper surface of the portion of the shower head 18 having the gas outlet holes 19 toward a central portion of the shower head 18*

" (emphasis added)

In response, the Examiner has reconsidered the Horiike reference and finds no structure impeeding Horiike's cited equivalents from the described gas flow of "the gas mixture supply port is so constructed and arranged that the gas mixture to be supplied from the gas- mixing chamber flows in direct contact with, and only from outside a circumferential outer perimeter of, the upper surface of the shower head and the gas-injection holes toward a central portion along the upper surface of the shower head.". Indeed, only a cursory comparison of Applicant's Figures 2 and 3 with Horiike's Figure 1 reveals that the claimed flow dynamic/characterization is indeed met.

Applicant states:

"

Applicants respectfully submit that Horrike fails to teach or suggest such a feature as the electrode 16 in Figure 2 is disposed directly between the gas outlet holes 19 and the "gas-mixing chamber." As such, the gas outlet holes 19 of Horiike are disposed indirectly opposite the "gas-mixture chamber" and not directly as are the gas- injection holes of Claims 1 and 13.

"

In response, the Examiner has again reconsidered Horiike's Figure 1 and finds absolutely no structural difference between Applicant's claimed Figure 2,3 and Horiike's Figure 1. Horiike's Figure 1 thus anticipates the claimed structure.

Conclusion

10. This is a continued examination of applicant's earlier Application No. 10612149. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272-1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1792 art unit is (571) 273-8300. Any Inquiry

of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.

/Rudy Zervigon/

Primary Examiner, Art Unit 1792